Capacity Auction Settlements Administrative Updates: Reference Guide

This reference guide has been created to assist stakeholders' review of the amendments to Capacity Auction-related settlement language that is being moved from their current location in Market Manual 5.5 and Charge Types and Equations to Market Rule Chapter 9. These updates are being made to be consistent with other sections of that rule chapter, will not change anything in the settlement system, nor will any market participant settlement activities be changed as a result of these updates. The guide provides a side-by-side comparison of the current language with how the amendments proposed will appear, if implemented as part of the 2023 capacity auction enhancements stream 2 administrative updates.

Specifically, the following payments and charges are included for comparison:

- Availability Payment
- Capacity Auction Dispatch Test Payment and Emergency Activation Payment
- Availability Charge
- Capacity Charge
- Capacity Import Call Failure Charge
- Buy-out Charge
- Capacity Deficiency Charge

Any new charges added as part of stream 1 of the 2023 capacity auction enhancements are not included in this document. Some variables and their definitions that were added or revised as part of stream 1 have been included to assist in understanding their impact on existing charges.

Please note that this document is provided for informational purposes only to assist in the review of the draft market rules and market manuals. Any italicized words found in this document have the meaning ascribed to them in Chapter 11 of the market rules.

The complete package of proposed amendments to the market rules and market manuals as part of stream 2 have been posted to the Capacity Auction Enhancement webpage for stakeholder review and comment.

Payments

Availability Payment

Original Language	Revised Language
Ch. 9, s. 4.7J.1: The IESO shall remit an availability payment associated with a *capacity obligation*, if any, to the applicable *capacity market participant*, in the manner specified in the applicable *market manual*.	**Ch. 9, s. 4.7J.1:** The *capacity auction* availability payment *settlement amount* for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' for the relevant *energy market billing period* ("CAAP^m_k") shall be calculated for each *energy market billing period* and disbursed to *capacity market participants* who have a *capacity obligation* during the relevant *obligation period* and which shall be calculated as follows: $$\text{CAAP}^m_k = \Sigma^H \, \text{CCO}^m_{k,h} \times \text{CACP}^z_h$$ Where: (a) 'H' is the set of all *settlement hours* within the *availability window* of all *business days* in the relevant *energy market billing period*.
Market Manual 5.5, s. 1.6.26.2: *CMPs* with a *capacity obligation* will be paid a monthly availability payment based on their *capacity obligation*. The IESO uses charge type 1314 "Capacity Obligation – Availability Payment" to settle the availability payments to *CMPs*. Charge type 1314 will be settled on the first month-end *recalculated settlement statement* for the commitment month.	**Market Manual 5.5, s. 1.6.26.2:** *Capacity market participants* with a *capacity obligation* will be paid a *capacity auction* availability payment *settlement amount* for every *energy market billing period* of the *commitment period* to which the *capacity obligation* relates, based on its *capacity obligation*.

Original Language	Revised Language
	The *IESO* uses *charge type* 1314 "Capacity Obligation – Availability Payment" to settle the *capacity auction* availability payment *settlement amount*
Charge Types and Equations (1314): $\sum h\ n\ CCO_k \times CACP_h$ Where 'h' is an hour within the hours of availability for the month. Where 'n' is the number of hours of availability during a *business day* multiplied by the number of *business days* in the month which the settlement is for.	**Charge Types and Equations (1314):** $\sum^H CCO^m_{k,h} \times CACP^z_h$ Where: 'H' is the set of all *settlement hours* within the *availability window* of all *business days* in the relevant *energy market billing period*.

Capacity Auction Dispatch Test Payment and Capacity Auction Emergency Activation Payment

Original Language	Revised Language
Ch. 9, s. 4.7J.5 The IESO shall remit a test activation payment or emergency activation payment for a valid test activation or emergency activation, respectively, of an *hourly demand response resource*, associated with a *capacity obligation*, if any, to the applicable *capacity market participant*, in the manner specified in the applicable *market manuals*.	Ch. 9, s. 4.7J.5 Subject to section 4.7J.5.3, the *IESO* shall calculate and disburse a *capacity auction dispatch test* payment *settlement amount* or *capacity auction* emergency activation payment *settlement amount* for a valid *capacity auction dispatch test* or emergency activation, respectively, of an *hourly demand response resource* to the applicable *capacity market participant*, in accordance with the following: **4.7J.5.1** in regards to capacity auction dispatch tests, the capacity auction dispatch test payment settlement amount for capacity market participant 'k' participating with an hourly demand response resource at delivery point 'm' in settlement hour 'h' ("CATAP$^m_{k,h}$") shall be determined for each applicable settlement hour within the activation window as follows:

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	$CATAP^m_{k,h} = HDRTAPR \times HDRDC^m_{k,h}$ 4.7J.5.2 in regards to emergency operating state activation, the capacity auction emergency operating state activation payment settlement amount for capacity market participant 'k' participating with an hourly demand response resource at delivery point 'm' in settlement hour 'h' ("$CAEOP^m_{k,h}$") shall be determined for each applicable settlement hour within the activation window as follows: $CAEOP^m_{k,h} = Max(0, HDRBP^m_{k,h} - Max(0, HOEP_h)) \times HDRDC^m_{k,h}$ **4.7J.5.3** If measurement data for any *metering interval* within a *settlement hour* was not submitted to the *IESO* in accordance with the applicable *market manual,* the *capacity market participant* shall not be eligible to receive a *capacity auction* test activation payment *settlement amount* or a *capacity auction* emergency operating state activation payment *settlement amount* for such *settlement hour*.
Market Manual 5.5, s. 1.6.26.2A *Hourly demand response* (*HDR*) *resources* will be compensated when they are activated out of market to provide *demand response capacity* either for a test activation or an activation leading up to or during an *emergency operating state* pursuant to Section 4.7J.5 of Market Rules, Chapter 9. Please refer to the IESO Charge Types and Equations and section 1.6.26.3.1 below for the calculation of these payments. For each hour of the test activation or an activation leading up to or during an *emergency operating state*, the *HDR resource* will receive a payment based on the measured *demand response*	**Market Manual 5.5, s. 1.6.26.2A** Hourly demand response resources will be compensated for each settlement hour of a capacity auction dispatch test or an activation that is in advance of or during an emergency operating state. In order to determine the applicable measured *demand response capacity* (i.e. $HDRDC^m_{k,h}$), the *IESO* will determine the applicable Curtailed $MW^m_{k,h}$ in accordance with the following: (a) For commercial and industrial *hourly demand response resources*, as follows:

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capacity. Payments related to test activations will be based on a pre-determined rate and the measured *demand response capacity*. Payments related to an activation leading up to or during an *emergency operating state* will be based on the measured *demand response capacity* and the difference between submitted *real-time demand response energy bids* and *Hourly Ontario Energy Price* as applicable for each hour of the activation.	Curtailed MWh = Max (0, (C&I_HDR_BL$^m_{k,h}$ – HDR_AC$^m_{k,h}$)
	Where:
The measured *demand response capacity* for each hour shall be capped at the lesser of the *capacity obligation*, the *HDR resource*'s registered capability, the maximum quantity of the *demand response energy bid* for the resource, and the quantity of *auction capacity* that the resource was activated for.	o "C&I_HDR_BL$^m_{k,h}$" is the calculated baseline *energy* consumption (in MWh) for *capacity market participant* 'k' at *delivery point* 'm' for the *hourly demand response resource* in *settlement hour* "h", calculated in accordance with section 1.6.26.3.1;
	o "HDR_AC$^m_{k,h}$" is the total measured quantity of *energy* consumed (in MWh) for *capacity market participant* 'k' at *delivery point* 'm' for the *hourly demand response resource* in *settlement hour* "h", as determined in accordance with the submitted measurement data and AQEW, as the case may be.
For greater clarity, if measurement data for any interval is missing (i.e. measurement data was not submitted to the IESO), the payment for that hour will be $0.	(b) For residential hourly demand response resources, as follows:
	Curtailed MWh = Max (0, TCTG$^m_{k,h}$ X (ACGL$^m_{k,h}$ – ATGL$^m_{k,h}$))
The IESO uses *charge type* 1320 "Capacity Obligation – Out of Market Activation Payment" to compensate *HDR resources* when they are activated for a test or an *emergency operating state* activation. *Charge type* 1320 will be settled on the first month-end *recalculated settlement statement* for the commitment month.	Where:
	o "TCTG$^m_{k,h}$" is the absolute number of *demand response contributors* in the "Treatment group" for *capacity market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* for *settlement hour* 'h';
	o "ACGL$^m_{k,h}$" is the average quantity of *energy* consumed (in MWh) by all of the *demand response contributors* in the "Control group" for *capacity market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* for *settlement hour* 'h', calculated in accordance with section 1.6.26.3.1; and

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	○ "$ATGL^m_{k,h}$" is the average quantity of *energy* consumed (in MWh) by all of the *demand response contributors* in the "Treatment group" for *capacity market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* for *settlement hour* 'h', as determined in accordance with the submitted measurement data.
	For the purpose of determining the appropriate *capacity auction dispatch test* payment *settlement amount,* HDRTAPR shall equal $250/MWh.
	For greater clarity, if measurement data for any *metering interval* is missing (i.e. measurement data was not submitted to the *IESO*), the *capacity auction dispatch test* payment *settlement amount* or emergency activation payment *settlement amount* for that *settlement hour* will be $0.
	The *IESO* uses *charge type* 1320 "Capacity Obligation – Out of Market Activation Payment" to settle the *capacity auction dispatch test* payment *settlement amount* and the emergency activation payment *settlement amount*.
Charge Types and Equations (1320) For test activations: HDRTAPR X $HDRDC_h$ For emergency operating state activations: Max(0, $HDRBP_h$ – Max(0,$HOEP_h$)) X $HDRDC_h$ Where h is an hour within the activation window	**Charge Types and Equations (1320)** **For *capacity auction dispatch test* activations:** HDRTAPR X $HDRDC^m_{k,h}$ **For *emergency operating state* activations:** Max(0, $HDRBP^m_{k,h}$ – Max(0,$HOEP_h$)) X $HDRDC^m_{k,h}$

Charges

Availability Charge

Original Language	Revised Language
Ch. 9, s. 4.7J.2.1 A *capacity market participant* participating with an *hourly demand response resource* or a *capacity dispatchable load resource* shall be subject to an availability charge for every hour of the availability window it fails to submit *demand response energy bids* in the amount of their *capacity obligation* in either the day-ahead commitment process or in the real-time energy market. **4.7J.2.1A** A *capacity market participant* participating with a *capacity generation resource*, system-backed capacity import resource, *generator-backed capacity import resource*, or *capacity storage resource* shall be subject to an availability charge for every hour of the availability window in which it fails to submit energy offers in the amount of their *capacity obligation* in the day-ahead commitment process or in the pre-dispatch hour.	**Ch. 9, s. 4.7J.2.1** The *capacity auction* availability charge *settlement amount* for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' for the relevant *trading day* ("CAAC^m_k") shall be collected from such *capacity market participants* in accordance with the following: **4.7J.2.1A** In regards to a *capacity market participant* participating with an *hourly demand response resource* or a *capacity dispatchable load resource*, the *capacity auction* availability charge *settlement amount* shall be calculated for each *trading day* for which it receives a standby notice and it fails for any *settlement hour* of the *availability window* during such *trading day* to submit a *demand response energy bid* in an amount that is greater than or equal to its *capacity obligation* in the day-ahead commitment process and maintain such *energy bid* through the *real-time energy market*. The *capacity auction* availability charge *settlement amount* is calculated as follows: $CAAC^m_k = \Sigma^H (-1) \times Max(0, CCO^m_{k,h} - DREBQ^m_{k,h}) \times CACP^z_h \times CNPF_{tm}$ Where: (a) 'H' is the set of all *settlement hours* within the *availability window* during the relevant *trading day*;

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	(b) If the *capacity market participant* did not submit a *demand response energy bid* for its *hourly demand response resource* or *capacity dispatchable load resource*, as the case may be, for *settlement hour* 'h' in the day-ahead commitment process or failed to maintain such *energy bid* through the *real-time energy market*, $DREBQ^m_{k,h} = 0$; (c) In regards to *hourly demand response resource*, if the *demand response energy bids* submitted for *settlement hour* 'h' does not form part of *energy bids* spanning at least four consecutive *settlement hours*, $DREBQ^m_{k,h} = 0$; (d) If the *demand response energy bid* submitted in the day-ahead commitment process for *settlement hour* 'h' is not equal to the *demand response energy bid* submitted in the *real-time market* for the same *settlement hour*, $DREBQ^m_{k,h}$ shall be equal to the lesser of the two *demand response energy bids*; and (e) Notwithstanding any of the foregoing, $DREBQ^m_{k,h}$ shall not exceed the $CARC^m_k$ for the *hourly demand response resource* or *capacity dispatchable load resource*, as the case may be. **4.7J.2.1B** Subject to section 4.7J2.1B.1 and in regards to a *capacity market participant* participating with a *capacity generation resource*, *system-backed capacity import resource*, *generator-backed capacity import resource*, or *capacity storage resource*, the *capacity auction* availability charge *settlement amount* shall be calculated for each *trading day* it fails for any *settlement hour* of an *availability window* during such *trading day* to submit *energy offer* in an amount that is greater than or equal to its *capacity obligation* in the day-ahead commitment process and maintain

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	such *energy offer* in accordance with the applicable *market manual*. The *capacity auction* availability charge *settlement amount* is calculated as follows: $CAAC^m_k = \Sigma^H (-1) \times Max(0, CCO^m_{k,h} - CAEO^m_{h,k}) \times CACP^z_h \times CNPF_{tm}$ Where: (a) 'H' is the set of all *settlement hours* within the *availability window* during the relevant *trading day*; (b) If the *capacity market participant* did not submit an *energy offer* in the day-ahead commitment process or maintain such *energy offer* in accordance with the applicable *market manual* for *settlement hour* 'h', $CAEO^m_{h,k} = 0$; (c) If the *energy offer* submitted in the day-ahead commitment process for *settlement hour* 'h' is not equal to the *energy offer* submitted in the *pre-dispatch* hour for the same *settlement hour*, $CAEO^m_{h,k}$ shall be equal to the lesser of the two *energy offers*; and (d) If a *capacity storage resource* receives a non-zero *energy dispatch instruction* within the relevant *availability window,* the $CAEO^m_{h,k}$ for the remaining *settlement hours* of the *availability window* after receiving such non-zero *energy dispatch instruction* shall be equal to the *energy offer* applicable to the *settlement hour* immediately prior to the receipt of such non-zero *energy dispatch instruction*. **4.7J2.1B.1** Notwithstanding section 4.7J2.1B, the *capacity auction* availability charge *settlement amount* shall be calculated for a *capacity storage resource* for any remaining *settlement hours* within an

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	availability window after the *capacity storage resource* receives a non-zero *energy dispatch instruction* within such *availability window*.
Market Manual 5.5, s. 1.6.26.3.2 Availability charges apply when *CMPs* with *capacity obligations* fail to submit and maintain their *demand response energy bids* or *energy offers,* as applicable*,* for the day-ahead commitment process through to pre-dispatch and until *real-time market* for *auction capacity* at least equal to their *capacity obligation*. The charge is calculated for each hour within the *availability* window of the *obligation period* for each *capacity auction resource*. The total *auction capacity* made available that is used in the assessment of the availability charges for each hour will be capped at the *capacity obligation* amount. For the settlement of the availability charges, a non-performance factor (NPF) multiplier is used based on the applicable month as per Section 6.1 of Market Manual 12: "Capacity Auctions". The *IESO* uses *charge type* 1315 "Capacity Obligation – Availability Charge" to settle the availability charges. *Charge type* 1315 will be settled on the first *recalculated settlement statement* for the *trading day*. **Assessment for Demand Response Resources (Capacity Dispatchable Load Resources and HDR Resources)** A *demand response energy bid* signals to the *IESO* a *demand response resource's* availability to provide *auction capacity* and the *dispatch algorithm* uses the *demand response energy bids* to *dispatch* (i.e. a *capacity dispatchable load resource*) or activate	**Market Manual 5.5, s. 1.6.26.3.2** The *capacity auction* availability charge *settlement amount* applies when *capacity market participants* with *capacity obligations* fail to submit and maintain their *demand response energy bids* or *energy offers,* as applicable*,* for the day-ahead commitment process through to pre-dispatch and until *real-time market* for *auction capacity* at least equal to their *capacity obligation*. The charge is calculated for each *settlement hour* within the *availability window* of the *obligation period* for each *capacity auction resource*. For the settlement of the availability charges, a non-performance factor (CNPF) multiplier is used based on the applicable month as per Section 6.1 of Market Manual 12: "Capacity Auctions". The *IESO* uses *charge type* 1315 "Capacity Obligation – Availability Charge" to settle the *capacity auction* availability charge *settlement amount*. **Assessment for Capacity Generation Resources** The *IESO* will apply an availability charge to any *settlement hour* within the *availability window* where *capacity market participants* participating with a *capacity generation resource* fail to submit an *energy offer* for their *capacity generation resource* for an amount greater than or equal to their *capacity obligation* quantity in the following periods: a. in the day-ahead commitment process; and

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(i.e. an *HDR resource*) a *demand response resource* for delivering *demand response capacity*.
 	
The *IESO* will apply an availability charge to any hour within the *availability window* where a *demand response energy bid* for an amount greater than or equal to the *capacity obligation* is not submitted and maintained from the day-ahead commitment process through to real-time. The quantity of *auction capacity* assessed for availability is the lesser quantity of the *demand response energy bids* submitted from day-ahead commitment process through to pre-dispatch and until real-time (for an hour within the *availability window*). For each resource, the quantity of the *demand response energy bid* used towards the quantity of *auction capacity* assessment is capped at the resource's registered capability.
 	
Additional Considerations for HDR Resources
 	
HDR resources must have *demand response energy bids* that are part of a block of four (4) consecutive hours or more. *Demand response energy bids* for hours that are not part of at least four (4) consecutive hours will be treated as if no *demand response energy bids* were submitted for the hours and such hours will contribute to the availability charge for the day.
 	
Furthermore, the quantity of *auction capacity* assessed for availability will be considered as zero for any hours in which no *demand response energy bids* were submitted or deemed to not have been submitted (specific to *HDR resources*). When the *IESO* has issued a standby notice, all *demand response energy bids* submitted after 7am of the *dispatch day* will be used in the availability assessment of *auction capacity*. Details on standby notices and submission of *dispatch data* in the *energy market* can
	b. in *pre-dispatch* for each *pre-dispatch* run that occurs prior to the earliest of the commencement of the following:
	
	   1. the 2-hour mandatory window applicable to the relevant hour of the *availability window*;
	   2. a period of time equal to the *capacity generation resource's* registered *elapsed time to dispatch* that is prior to the relevant hour of the *availability window;* and
	   3. a period of time equal to the *capacity generation resource's* minimum generation block down time that is prior to the relevant hour of the *availability window.*

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be found in Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets and Market Manual 4.3: Real-time Scheduling of Physical Markets. **Assessment for Capacity Generation Resources** An *energy offer* signals to the *IESO* a generator's availability to provide energy in order to meet its *capacity obligation*. The *dispatch algorithm* uses the *energy offer* to *dispatch* a resource for delivering *auction capacity*. The *IESO* will apply an availability charge to any hour within the *availability window* where *CMPs* participating with a *capacity generation resource* fail to submit an *energy offer* for their *capacity generation resource* for an amount greater than or equal to their *capacity obligation* quantity in the following periods: 1. in the day-ahead commitment process; and 2. in *pre-dispatch* for each *pre-dispatch* run up to an hour specific to each *capacity generation resource* relative to each hour of availability. The last feasible availability assessment in *pre-dispatch* relative to each hour of availability within the *availability window* will be resource-specific for each generator *CMP*. The assessment timeframe will be based on the generator characteristics and will reflect the greater of: 1) the generator's registered elapsed time to	

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dispatch[1], 2) the generator's minimum generation block down time[2], and 3) 2-hour mandatory window.	

Assessment for System-Backed Capacity Import Resources and Generator-Backed Capacity Import Resources

The *IESO* will apply an availability charge to any hour within the *availability window* where an *energy offer* for an amount greater than or equal to the *capacity obligation* is not submitted and maintained from the day-ahead commitment process through to pre-dispatch. The quantity of *auction capacity* assessed for availability is the lesser quantity of the *energy offers* submitted from day-ahead commitment process through to pre-dispatch (for an hour within the availability window)

Assessment for Capacity Storage Resources

The *IESO* will apply an availability charge to any hour within the *availability window* where an *energy offer* for an amount greater than or equal to the *capacity obligation* is not submitted and maintained from the day-ahead commitment process through to pre-dispatch and until real-time.

The availability assessment will not be conducted for any remaining hours after the *capacity storage resource* receives non-zero *energy dispatch instructions* within the *availability window* for the applicable *business day*.

The quantity of *auction capacity* assessed for availability is the lesser quantity of the *energy offers* submitted from day-ahead

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[1] Attribute submitted to the IESO and maintained by the market participant as a part of facility registration. Refer to Section 5.1.3 of Market Manual 9, Part 9.1: Submitting Registration Data for the DACP.

[2] Attribute submitted as a part of the Daily Generation Data. Refer to Section 5.2 of Market Manual 9, Part 9.2: Submitting Operational and Market Data for the DACP.

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commitment process through to pre-dispatch and until real-time (for an hour within the *availability window*).	
Charge Types and Equations (1315) For capacity dispatchable load resources and hourly demand response resources: $\sum_n^h (-1) \times \text{Max}(0, (CCO_k - DREBQ_h)) \times CACP_h \times CNPF_m$ For capacity generation resources, system-backed capacity import resources, generator-backed backed capacity import resources and capacity storage resources: $\sum_n^h (-1) \times \text{Max}(0, (CCO_k - CAEO_h)) \times CACP_h \times CNPF_m$ Where 'h' is an hour within the hours of availability for the day. Where 'n' is the number of hours of availability for the day and 'm' is the month being settled	**Charge Types and Equations (1315)** In regards to a *capacity market participant* participating with an *hourly demand response resource* or a *capacity dispatchable load resource*: $\sum_h^n (-1) \times \text{Max}(0, (CCO^m_{k,h} - DREBQ^m_{k,h})) \times CACP^z_h \times CNPF_{tm}$ Where: (a) 'H' is the set of all *settlement hours* within the *availability window* during the relevant *trading day*; (b) If the *capacity market participant* did not submit a *demand response energy bid* for its *hourly demand response resource* or *capacity dispatchable load resource*, as the case may be, for *settlement hour* 'h' in the day-ahead commitment process or failed to maintain such *energy bid* through the *real-time energy market*, $DREBQ^m_{k,h} = 0$; (c) In regards to *hourly demand response resource*, if the *demand response energy bids* submitted for *settlement hour* 'h' does not form part of *energy bids* spanning at least four consecutive *settlement hours*, $DREBQ^m_{k,h} = 0$; (d) If the *demand response energy bid* submitted in the day-ahead commitment process for *settlement hour* 'h' is not equal to the *demand response energy bid* submitted in the *real-time market* for the same *settlement hour*, $DREBQ^m_{k,h}$ shall be equal to the lesser of the two *demand response energy bids*; and (e) Notwithstanding any of the foregoing, $DREBQ^m_{k,h}$ shall not exceed the $CARC^m_k$ for the *hourly demand response*

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	resource or *capacity dispatchable load resource*, as the case may be.
	In regards to a *capacity market participant* participating with a *capacity generation resource*, *system-backed capacity import resource*, *generator-backed capacity import resource*, or *capacity storage resource*:
	$\sum_h^n (-1) \times \text{Max}(0, (CCO^m_{k,h} - CAEO^m_{k,h})) \times CACP^z_h \times CNPF_{tm}$
	Where:
	(a) 'H' is the set of all *settlement hours* within the *availability window* during the relevant *trading day*;
	(b) If the *capacity market participant* did not submit an *energy offer* in the day-ahead commitment process or maintain such *energy offer* in accordance with the applicable *market manual* for *settlement hour* 'h', $CAEO^m_{h,k} = 0$;
	(c) If the *energy offer* submitted in the day-ahead commitment process for *settlement hour* 'h' is not equal to the *energy offer* submitted in the *pre-dispatch* hour for the same *settlement hour*, $CAEO^m_{h,k}$ shall be equal to the lesser of the two *energy offers*;
	(d) If a *capacity storage resource* receives a non-zero *energy dispatch instruction* within the relevant *availability window*, the $CAEO^m_{h,k}$ for the remaining *settlement hours* of the *availability window* after receiving such non-zero *energy dispatch instruction* shall be equal to the *energy offer* applicable to the *settlement hour* immediately prior to the receipt of such non-zero *energy dispatch instruction*.

Dispatch Charge

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Ch. 9, s. 4.7J.2.2	**Ch. 9, s. 4.7J.2.2**
A *capacity market participant* participating with an *hourly demand response resource* shall be subject to a dispatch charge for failure to comply with an activation notice received under section 19.4.5 of Chapter 7.	Subject to section 19.4.5 and 7.5.3 of Chapter 7, the *capacity auction* dispatch charge *settlement amount* for *capacity market participant* 'k' at *delivery point* 'm' in *settlement hour* 'h' ("CADC$^m_{k,h}$") shall be calculated and collected from such *capacity market participant* participating with a commercial or industrial *hourly demand response resource* for each *settlement hour* of an *availability window* in which the *hourly demand response resource* fails to comply with an activation notice, as determined in accordance with section 4.7J.2.2.1, and which shall be calculated in accordance with the following: $$CADC^m_{k,h} = (-1) \times DRSQty^m_{k,h} \times CACP^z_h \times CNPF_{tm}$$ Where: (a) 'h' is a *settlement hour* in which the *hourly demand response resource* failed to comply with its activation notice, as determined in accordance with the applicable *market manual*. (b) 'tm' is the *energy market billing period* that corresponds to *settlement hour* 'h'. **4.7J.2.2.1** A commercial or industrial *hourly demand response resource* is determined to have failed to comply with an activation notice if the following condition is true: C&I_HDR_BL$^{m,t}_{k,h}$ - HDR_AC$^{m,t}_{k,h}$ < 85% x (TBQ$^{m,t}_{k,h}$ - DQSW$_{k,h}^{m,t}$) Where:

Original Language	Revised Language
	(a) "C&I_HDR_BL$^{m,t}_{k,h}$" is the amount calculated pursuant to the applicable *market manual*. (b) "HDR_AC$^{m,t}_{k,h}$" is the total measured quantity of *energy* consumed (in MWh) for *capacity market participant* 'k' at *delivery point* 'm' for the *hourly demand response resource* in *metering interval* 't' of *settlement hour* "h", as determined in accordance with the submitted measurement data and AQEW, as the case may be. (c) "TBQ$^{m,t}_{k,h}$" has the same meaning as ascribed to the same variable within the definition of HDRDC$^m_{k,h}$ in section 3.1.10.
Market Manual 5.5, s. 1.6.26.3.4 The dispatch charge is a non-performance charge applicable only to C&I *HDR resources* that have failed to follow their *dispatch instructions*. A fifteen percent (15%) dead band of the *dispatch instructions* will be used in this assessment. The dispatch charge applies to the *dispatch hour* when a C&I *HDR resource* fails to follow their *dispatch instructions* within the specified dead band for any 5-minute interval within the *dispatch hour*. The C&I HDR resource is deemed to have failed in meeting its *dispatch instructions* if the following condition is true: $$\text{Baseline}_i - \text{Actual Consumption}_i < 85\% \text{ x } (\text{Total Bid Qty}_i - \text{Schedule}_i)$$ Where: • "i" is an interval within the *dispatch hour* within the activation event. • "Baseline" is the calculated C&I HDR baseline for the interval (see section 1.6.26.3.1).	**Market Manual 5.5, s. 1.6.2.3.4** The *capacity auction* dispatch charge *settlement amount* is applicable only to commercial & industrial *hourly demand response resources* that are determined to have failed to follow their *dispatch instructions* during an activation, including *capacity auction dispatch tests* and *capacity auction capacity tests,* for any *dispatch interval* within the *settlement hour,* as determined in accordance with section 4.7J.2.2.1 of Chapter 9. For greater clarity, if measurement data for the interval required for "Actual Consumption" is missing (i.e. measurement data was not submitted), C&I_HDR_BL$^{m,t}_{k,h}$ - HDR_AC$^{m,t}_{k,h}$, in the formula outlined in section 4.7J.2.2.1 of Chapter 9 is 0. The *IESO* uses *charge type* 1317 "Capacity Obligation – Dispatch Charge" to settle the *capacity auction* dispatch charge *settlement amount*.

Original Language	Revised Language
• "Actual Consumption" is the measurement data for the interval. • "Total Bid Qty" is the maximum quantity of the *demand response energy bid* converted to an interval equivalent. • "Schedule" is the real-time constrained schedule quantity amount for the interval. For greater clarity, if measurement data for the interval required for "Actual Consumption" is missing (i.e. measurement data was not submitted), $Baseline_i$ - Actual $Consumption_i$, in the above formula is 0. The *IESO* uses *charge type* 1317 "Capacity Obligation – Dispatch Charge" to settle the dispatch charge when a C&I *HDR resource* failed to follow its *dispatch instructions*. *Charge type* 1317 will be settled on the first *recalculated settlement statement* for the *trading day*.	
Charge Types and Equations (1317) $(-1) \times DRSQty_h \times CACP_h \times CNPF_m$ Where 'h' is an hour in which the hourly demand response resource failed to follow its dispatch instruction and 'm' is the month being settled.	**Charge Types and Equations (1317)** $(-1) \times DRSQty^m_{k,h} \times CACP^z_h \times CNPF_{tm}$ Where: (a) 'h' is a *settlement hour* in which the *hourly demand response resource* failed to comply with its activation notice, as determined in accordance with the applicable *market manual*. (b) 'tm' is the *energy market billing period* that corresponds to *settlement hour* 'h'.

Administration Charge

Original Language	Revised Language
Ch. 9, s. 4.7J.2.3 A *capacity market participant* participating with an *hourly demand response resource* or a *generator-backed capacity import resource* shall be subject to a *capacity obligation* administration charge for failure to provide timely, accurate and complete data, including measurement data, to the *IESO*.	**Ch. 9, s. 4.7J.2.3** The *capacity auction* administration charge *settlement amount* for *capacity market participant* 'k' at *delivery point* 'm' in the relevant *energy market billing period* ("CAADM^m_k") shall be calculated and collected from each *capacity market participant* participating with a virtual *hourly demand response resource* or a *generator-backed capacity import resource* for each *energy market billing period* in which such *capacity market participant* fails to provide timely, accurate and complete data, including measurement data to the *IESO* in accordance with the applicable *market manual*, and which shall be calculated as follows: CAADM^m_k= (-1) x CAAP^m_k Where: (a) 'CAAP^m_k' is the *capacity auction* availability payment *settlement amount*, calculated in accordance with section 4.7J.1, for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' for the relevant *energy market billing period*.

Market Manual 5.5, s. 1.6.26.3.3
 	
Administration charges apply when *CMPs* with *HDR resources* that are not revenue-metered by the *IESO* or *CMPs* with *generator-backed capacity import resources* fail to provide:
 	
  (i)   for C&I *HDR resources*, monthly measurement data for the month in which there was at least one activation and corresponding historical measurement data,
 	
  (ii)   for residential *HDR resources*, measurement data for activation days, and;
	Market Manual 5.5, s. 1.6.26.3.3
	
	The *capacity auction* administration charge *settlement amount* applies when *capacity market participants* with *hourly demand response resources* that are not revenue-metered by the *IESO* or *capacity market participants* with *generator-backed capacity import resources* fail to provide timely, accurate and complete data, including measurement data, to the *IESO* in accordance with the timelines and requirements of section 5.3.3 and 5.3.4 of *market manual* 12.

Original Language	Revised Language
(iii) for g*enerator-backed* c*apacity import resources*, a data submission to confirm the capability of each *generator-backed import contributor* associated with the *generator-backed capacity import resource* for a test activation as described in Section 5.3.3 of Market Manual 12: "Capacity Auctions". For *CMPs* with *HDR resources*, measurement data must be provided no later than the sixth (6th) *business day* before the end of the calendar month following the calendar month in which the monthly data relates. For example, if there was at least one activation of an *HDR resource* during the month of May, then the measurement data for the month of May and historical data (i.e. 35 *business days* prior) are due six (6) *business days* before the end of June. Upon *IESO*'s notification of errors or discrepancies with the data submitted by the deadline, *CMPs* who re-submit measurement data (without errors) by the re-submission deadline can avoid an administration charge. However, failure to provide error-free measurement data (refer to Section 5.3.2 of Market Manual 12: Capacity Auctions) by the re-submission deadline will result in an administration charge. The administration charge will also be applicable to a *CMPs* with a virtual *HDR resource* if the submitted measurement data is determined to be inaccurate during an audit conducted by the *IESO*. The *IESO* uses *charge type* 1316 "Capacity Obligation – Administration Charge" to settle the administration charges applicable to *CMPs* that failed to provide the required measurement data by the deadline. *Charge type* 1316 will be	The administration charge will also be applicable to *capacity market participants* with a virtual *hourly demand response resource* if the submitted measurement data is determined to be inaccurate during an audit conducted by the *IESO*. The *IESO* uses *charge type* 1316 "Capacity Obligation – Administration Charge" to settle the *capacity auction* administration charge *settlement amount*.

Original Language	Revised Language
settled on the first month-end *recalculated settlement statement* for the commitment month.	

Original Language	Revised Language
Charge Types and Equations (1316) (-1) x Availability Payment$_m$ Where 'm' is the month that is being settled. Where 'Availability Payment' is the settlement amount calculated for CT1314.	**Charge Types and Equations (1316)** (-1) x CAAP^m_k Where: (a) 'CAAP^m_k' is the *capacity auction* availability payment *settlement amount*, calculated in accordance with section 4.7J.1, for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' for the relevant *energy market billing period*.

Capacity Charge

Original Language	Revised Language
Ch. 9, s. 4.7J.2.4 Subject to section 19.4.5 of Chapter 7, a *capacity market participant* participating with an *hourly demand response resource* that fails to satisfy its *capacity obligation* in response to an activation test shall be subject to a capacity charge. **4.7J.2.5** Subject to section 7.5.3 of Chapter 7, a *capacity market participant* participating with either a *capacity dispatchable load resource*, a *capacity generation resource* or a *capacity storage resource* that fails to satisfy its *capacity obligation* in response to an activation test shall be subject to a capacity charge. **4.7J.2.6**	**Ch. 9, s. 4.7J.2.4** The capacity auction capacity charge settlement amount for capacity market participant 'k' at delivery point or intertie metering point 'm' in the relevant energy market billing period ("CACC^m_k") shall be calculated and collected from each capacity market participant for each energy market billing period in which such capacity market participant fails to deliver its cleared ICAP within the applicable threshold, as set out in the applicable market manual, in response to a capacity auction capacity test, and which shall be calculated as follows: CACC^m_k = (-1) x CAAP^m_k Where:

Original Language	Revised Language
Subject to section 7.5.8A of Chapter 7, a *capacity market participant* participating with a *system-backed capacity import resource* or a *generator-backed capacity import resource* that fails to satisfy its *capacity obligation* in response to an activation test shall be subject to a capacity charge.	(a) 'CAAP^m_k' is the *capacity auction* availability payment *settlement amount*, calculated in accordance with section 4.7J.1, for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' for the relevant *energy market billing period*. **4.7J.2.5** [Intentionally Left Blank – Section Deleted] **4.7J.2.6** [Intentionally Left Blank – Section Deleted]
Market Manual 5.5, s. 1.6.26.3.5 The capacity charge is applicable to all participating *capacity auction resources* when they fail to deliver on their scheduled *auction capacity* during a test activation. Assessment conditions for *capacity dispatchable load resources, capacity storage resources, capacity generation resources, system-backed capacity import resources* and *generator-backed capacity import resources* are outlined in Section 5.3.3 of Market Manual 12: "Capacity Auctions". The *IESO* uses *charge type* 1318 "Capacity Obligation – Capacity Charge" to settle the capacity charges. *Charge type* 1318 will be settled on the first month-end *recalculated settlement statement* for the commitment month. **Additional Consideration for** *System-Backed Capacity Import Resources* For *system-backed capacity import resources*, the charge applies if the scheduled intertie transaction is curtailed partially or in full during *real-time* after being scheduled during a *pre-dispatch* run;	**Market Manual 5.5, s. 1.6.26.3.5** The capacity charge is applicable to all participating *capacity auction resources* when they fail the *capacity auction capacity test*, as determined in accordance with Section 5.3.3 of Market Manual 12: "Capacity Auctions". The capacity charge for a failed *capacity auction capacity test* is equal to one month's availability payment. The *IESO* uses *charge type* 1318 "Capacity Obligation – Capacity Charge" to settle the *capacity* charges. **Assessment for HDR Resources** The charge applies when the resource fails the *capacity auction capacity test,* as determined in accordance with this section and Section 5.3.3 of Market Manual 12: "Capacity Auctions". The *IESO* will assess Commercial & Industrial and residential *hourly demand response resources* as described below. **Capacity Charge Assessment for C&I** *HDR Resource***s:**

Original Language	Revised Language
the *capacity market participant* will be exempt from the capacity charge where the curtailment reason is one of the following: TLRi, TLRe, ADQh[3].	A C&I *HDR resource* will be determined to have failed to provide *auction capacity* if the following condition is true for any *settlement hour* of the *capacity auction capacity test*:
Assessment for HDR Resources	$$\Sigma^T(\text{C\&I\_HDR\_BL}^{m,t}_{k,h} - \text{HDR\_AC}^{m,t}_{k,h})/12 < 90\% \times \text{CICAP}^m_{k,h}$$
The charge applies when the resource fails to deliver *demand response capacity* up to its *capacity obligation* into the *energy market* during a test activation; subject to applicable threshold.	Where:
A twenty percent (20%) dead band of the *dispatch instructions* will be used in the assessment. We will assess C&I and residential HDR resources differently as described below.	• "C&I HDR_BL$^{m,t}_{k,h}$" is the amount calculated pursuant to section 1.6.26.3.1 • "HDR_AC$^{m,t}_{k,h}$" is the total measured quantity of *energy* consumed (in MW) for *capacity market participant* 'k' at *delivery point* 'm' for the *hourly demand response resource* in *metering interval* 't' of *settlement hour* "h", as determined in accordance with the submitted measurement data and AQEW, as the case may be
Capacity Charge Assessment for C&I *HDR Resources*:	
A C&I *HDR resource* will be deemed to have failed to provide *auction capacity* if the following condition is true for the test activation:	• 'T' is the set of all *metering intervals* within the relevant *settlement hour*.
Average (C&I *HDR* Baseline$_i$ − Actual Consumption$_i$) < 80% x Average (Total Bid Qty$_i$ − Schedule$_i$)	For greater clarity, if measurement data for the interval required for "Actual Consumption" is missing (i.e. measurement data was not submitted), (C&I_HDR_BL$^{m,t}_{k,h}$ - HDR_AC$^{m,t}_{k,h}$), in the above formula is 0.
Where:	
• "i" is an interval within the activation event. • "C&I *HDR* Baseline" is the calculated C&I *HDR* baseline for the interval (see section 1.6.26.3.1). • "Actual Consumption" is the measurement data for the interval. • "Total Bid Qty" is the maximum quantity of the *demand response energy bid* converted to an interval equivalent.	**Capacity Charge Assessment for Residential Hourly Demand Response Resources:** A residential *hourly demand response resource* will be determined to have failed to provide *auction capacity* if the following condition is true for the *capacity auction capacity test*:

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[3] These curtailment reason codes are described in Market Manual 4.3: Real-Time Scheduling of the Physical Markets, Section 6.6 – Transaction Coding.

Original Language	Revised Language
• "Schedule" is the real-time constrained schedule quantity amount for the interval. For greater clarity, if measurement data for the interval required for "Actual Consumption" is missing (i.e. measurement data was not submitted), C&I *HDR* Baseline$_i$ - Actual Consumption$_i$, in the above formula is 0. **Capacity Charge Assessment for Residential HDRs:** A residential *HDR resource* will be deemed to have failed to provide *auction capacity* if the following condition is true for the test activation: $\text{Average (Adjusted Control Group Load}_h - \text{ Treatment Group Load}_h)$ $\times \text{ Number of Contributors in Treatment Group}_m <$ $80\% \times \text{Average } (Total\ Bid\ Qty_h - Schedule_h)$ Where: • "h" is an hour of the test activation event. • "m" is the month in which the test activation event takes place. • "Adjusted Control Group Load" is the calculated residential baseline (see section 1.6.26.3.1). • "Treatment Group Load" is the measurement data for the hour divided by the number of contributors in the treatment group for the month. • "Total Bid Qty" is the maximum quantity of the *demand response energy bid*. • "Schedule" is the real-time constrained schedule quantity amount.	$\Sigma^H \ [(\text{ACGL}^m_{k,h} - \text{ATGL}^m_{k,h}) \times \text{TCTG}^{\,m}_{k,h}]/4 < 90\% \times \text{CICAP}^m_{k,h}$ Where: • "ACGL$^m_{k,h}$" is the amount calculated pursuant to section 1.6.26.3.1 • "ATGL$^m_{k,h}$" is the is the average quantity of *energy* consumed (in MWh) by a single *demand response contributors* in the "Treatment group" for *capacity market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* in *settlement hour* 'h', calculated by dividing the quantity of *energy* consumed all of the *demand response contributors* in the "Treatment group", as determined in accordance with the submitted measurement data, by TCTG$^{\,m}_{k,h}$; • "TCTG$^{\,m}_{k,h}$" is the absolute number of *demand response contributors* in the "Treatment group" for *capacity market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* for s*ettlement hour* 'h'; • 'H' is the set of all *settlement hour* 'h' within the relevant *capacity auction capacity test*. For greater clarity, if measurement data for the *settlement hour* required are missing (i.e. measurement data was not submitted), or monthly residential contributor information was not submitted, (ACGL$^m_{k,h}$ - ATGL$^m_{k,h}$) in the above formula is zero (0).

Original Language	Revised Language
For greater clarity, if measurement data for the hour required are missing (i.e. measurement data was not submitted), or monthly residential contributor information was not submitted, $\text{Adjusted Control Group Load}_h - \text{Treatment Group Load}_h$ in the above formula is zero (0).	
Charge Types and Equations (1318) (-1) x Availability Payment$_m$ Where 'm' is the month that is being settled. Where 'Availability Payment' is the settlement amount as calculated for CT1314.	**Charge Types and Equations (1318)** (-1) x CAAP^m_k Where: (a) 'CAAP^m_k' is the *capacity auction* availability payment *settlement amount*, calculated in accordance with section 4.7J.1, for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' for the relevant *energy market billing period*.

Capacity Import Call Failure Charge

Original Language	Revised Language
Ch. 9, s. 4.7J.2.7 Subject to section 7.5.8A of Chapter 7, a *capacity market participant* participating with a *generator-backed capacity import resource* that fails to satisfy its *capacity obligation* in response to a capacity import call shall be subject to a capacity import call failure charge as specified in the applicable *market manual*.	**Ch. 9, s. 4.7J.2.7** Subject to section 7.5.8A of Chapter 7, the capacity auction capacity import failure settlement amount for capacity market participant 'k' participating with a generator-backed capacity import resource at delivery point or intertie metering point 'm' for the relevant energy market billing period ("CACIF^m_k") shall be calculated and collected from such capacity market participant for each energy market billing period in which such capacity market participant fails to satisfy its capacity obligation in response to a capacity import call, as determined in accordance with the applicable market manual, and which shall be calculated as follows:

Original Language	Revised Language
	$$CACIF^m_k = (-1) \times CAAP^m_k$$ Where: (a) '$CAAP^m_k$' is the capacity auction availability payment settlement amount, calculated in accordance with section 4.7J.1, for capacity market participant 'k' at delivery point or intertie metering point 'm' for the relevant energy market billing period.
Market Manual 5.5, s. 1.6.26.3.6 The *capacity import call* failure charge applies to *generator-backed capacity import resources* that fail to deliver the called upon *auction capacity* in response to a *capacity import call* in accordance with the process outlined in Section 6.8.1 of Market Manual 4.3: "Real-time Scheduling of the Physical Markets". The *IESO* uses *charge type* 1321 "Capacity Obligation – *Capacity Import Call* Failure Charge" to settle this charge. *Charge type* 1321 will be settled on the first month-end *recalculated settlement statement* for the commitment month.	**Market Manual 5.5, s. 1.6.26.3.6** The *capacity auction* capacity import *call* failure *settlement amount* applies to *generator-backed capacity import resources* that fail to deliver the called upon *auction capacity* in response to a *capacity import call* in accordance with the process outlined in Section 6.8.1 of Market Manual 4.3: "Real-time Scheduling of the Physical Markets". The *IESO* uses *charge type* 1321 "Capacity Obligation – *Capacity Import Call* Failure Charge" to settle the *capacity auction* capacity import failure *settlement amount*.
Charge Types and Equations (1321) (-1) x Availability Payment$_m$ Where 'm' is the month that is being settled. Where 'Availability Payment' is the settlement amount as calculated for CT1314.	**Charge Types and Equations (1321)** (-1) x $CAAP^m_k$ Where: (a) '$CAAP^m_k$' is the *capacity auction* availability payment *settlement amount*, calculated in accordance with section 4.7J.1, for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' for the relevant *energy market billing period*.

Buy-out Charge

Original Language	Revised Language

Ch. 9, s. 4.7J.3
 	
A *capacity market participant* or a *capacity auction participant* may elect to be subject to a buy-out charge for all, or a portion of, their *capacity obligation* in accordance with the applicable *market manual*, if they are unable to fulfill a *capacity obligation* for the remaining portion of an *obligation period*.
	Ch. 9, s. 4.7J.3
	
	A *capacity market participant* or a *capacity auction participant* may elect to be subject to a *capacity obligation* buy-out charge *settlement amount* for all, or a portion of, their *capacity obligation* in accordance with the applicable *market manual*. Upon the *IESO's* acceptance of a buy-out request, the *capacity market participant's capacity obligation* shall be reduced to reflect the approved buy-out and the *IESO* shall calculate the *capacity obligation* buy-out *settlement amount* for such *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' ("CABOC^m_k") which shall be calculated as follows:
	
	CABOC^m_k = 50% x Σ^H CBOC^m_k x CACP^z_h x (1 - CNPF$_{tm}$)
	
	Where:
	
	  (a) 'H' is the set of all *settlement hours* within the *availability window* of all *trading days* from the buy-out effective date to the end of the *commitment period*.
	  (b) 'tm' is the *energy market billing period* that corresponds to the relevant *settlement hour*.

Market Manual 5.5, s. 1.6.26.5 Upon *IESO's* acceptance of your buy-out request (refer to the buy-out process as detailed in Section 7 of Market Manual 12: "Capacity Auctions") we will calculate a buy-out charge. The *IESO* uses *charge type* 1319 "Capacity Obligation – Buy-Out Charge" as the *settlement* of a buy-out request. If the buy-out capacity is not your entire *capacity obligation* amount, then we will settle the remainder of the *obligation period* with the revised *capacity obligation* amount (i.e. original *capacity obligation* minus	**Market Manual 5.5, s. 1.6.26.5** Upon *IESO's* acceptance of a *capacity market participant* or *capacity auction participant's* buy-out request (refer to the buy-out process as detailed in Section 7 of Market Manual 12: "Capacity Auctions"), the *IESO* will calculate a *capacity obligation* buy-out *settlement amount*. The buy-out charge will appear on the *preliminary settlement statement* for the last day of the *energy market billing period* in which the *IESO* accepted the buy-out request.

Original Language	Revised Language
the buy-out capacity). *Charge type* 1319 will be settled on the next available month-end *preliminary settlement statement*.	The *IESO* uses *charge type* 1319 "Capacity Obligation – Buy-Out Charge" to settle the *capacity obligation* buy-out *settlement amount*. If the buy-out capacity is not the *capacity market participant* or *capacity auction participant's* entire *capacity obligation* amount, then the *IESO* will settle the remainder of the *obligation period* with the revised *capacity obligation* amount (i.e. original *capacity obligation* minus the buy-out capacity).
Charge Types and Equations (1319) $50\% \times \sum_d^n CBOC_k \times CACP \times (1 - CNPF_m)$ Where 'd' is a *business day* as defined in the Market Rules Chapter 11. Where 'n' is the range of *business days* from the buy-out effective date to the end of the *commitment period*. Where 'm' is the month that corresponds to the *business day*.	Charge Types and Equations (1319) $50\% \times \sum^H CBOC^m_k \times CACP^z_h \times (1 - CNPF_{tm})$ Where: (a) 'H' is the set of all *settlement hours* within the *availability window* of all *trading days* from the buy-out effective date to the end of the *commitment period*. (b) 'tm' is the *energy market billing period* that corresponds to the relevant *settlement hour*.

Capacity Deficiency Charge

Original Language	Revised Language
Ch. 9, s. 4.7J.2.8 Where the IESO has determined that all or a portion of a *capacity market participant's capacity obligation* is *over committed capacity* it shall be subject to a capacity deficiency charge and the *IESO* shall revoke the portion of the *capacity obligation* that is *over committed capacity*.	**Ch. 9, s. 4.7J.2.8** The capacity auction capacity deficiency settlement amount for capacity market participant 'k' at intertie metering point 'i' for the relevant energy market billing period ("$CACD^i_k$") shall be calculated and collected from such capacity market participant for each energy market billing period in which the IESO has determined that all or a portion of the capacity market participant's capacity obligation is over committed capacity, and which shall be calculated and collected for the entire obligation period in accordance with the following:

Original Language	Revised Language
	$CACD^i_k = \sum^H (-1.5) \times OCMW^i_k \times CACP^z_h$ Where: (a) 'H' is the set of all *settlement hours* within the *availability window* of all *trading days* within the relevant *energy market billing period*. **4.7J.2.8.1** If the *IESO* determines that all or a portion of the *capacity market participant's capacity obligation* is *over committed capacity*, the *capacity market participant's capacity obligation* shall be reduced by the amount of *over committed capacity* effective as of the first *trading day* of the subsequent *energy market billing period*. If such reduction in the *capacity market participant's capacity obligation* for such resource results in such *capacity obligation* being less than one MW, the remainder of the *capacity market participant's capacity obligation* for such resource is forfeited effective as of the first *trading day* of the subsequent *energy market billing period*.
Market Manual 5.5, s. 1.6.26.3.7 The capacity deficiency charge will apply to *generator-backed capacity import resources* deemed to have *over committed capacity* in accordance with the process outlined in Section 3.3 of Market Manual 12: "Capacity Auctions". The capacity deficiency charge will be equal to 1.5 times the availability payment for the entire *obligation period* for the *auction capacity* deemed to be *over committed capacity*. The *IESO* uses *charge type* 1322 "Capacity Obligation – Capacity Deficiency Charge" to settle this charge. *Charge type* 1322 will be	**Market Manual 5.5, s. 1.6.26.3.7** The *capacity auction* capacity deficiency *settlement amount* will apply to *generator-backed capacity import resources* deemed to have *over committed capacity* in accordance with the process outlined in Section 3.3 of Market Manual 12: "Capacity Auctions". The *IESO* uses *charge type* 1322 "Capacity Obligation – Capacity Deficiency Charge" to settle the *capacity auction* capacity deficiency *settlement amount*.

Original Language	Revised Language
settled on the first month-end *recalculated settlement statement* for the commitment month.	
Charge Types and Equations (1322) $\sum_h^n$ (-1.5) x $OCMW_k$ x $CACP_h$ Where 'h' is an hour within the hours of availability for the month in the applicable *obligation period*. Where 'n' is the number of hours of availability during a *business day* multiplied by the number of *business days* in the month multiplied by the number of months in the applicable *obligation period*.	**Charge Types and Equations (1322)** $\sum^H$ (-1.5) x $OCMW^i_k$ x $CACP^z_h$ Where: 'H' is the set of all *settlement hours* within the *availability window* of all *trading days* within the relevant *energy market billing period*.

Variables and Definitions

Original Language	Revised Language
CACP The capacity auction clearing price for the obligation period and capacity auction resource.	$CACP^z$ The *capacity auction clearing price* (in \$/MW per day) for the relevant *trading day* in electrical zone 'z'.
$CACP_h$ The capacity auction clearing price for the obligation period and capacity auction resource divided by the hours of availability for the day	$CACP^z_h$ **(revised as part of Stream 1)** The *capacity auction clearing price* for *settlement hour* 'h' (in \$/MW per hour) within the *availability window* in electrical zone 'z', determined by taking the *capacity auction clearing price* for the applicable *obligation period* and electrical zone and dividing by the

Original Language	Revised Language
	number of *settlement hours* within the *availability window* of all *trading days* within the *obligation period.*
CAEO$_h$ The energy offer quantity calculated for *capacity market participant* 'k' as the quantity of capacity provided by the associated *capacity auction resource* delivering the *auction capacity*	CAEO$^m_{h,k}$ **(revised as part of Stream 1)** The quantity of *auction capacity* for *settlement hour* 'h' (in MW) made available by *capacity auction resource* for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' in the relevant *settlement hour* of the *availability window* determined as the lesser of the *resource's energy offers* submitted in the day-ahead commitment process, pre-dispatch, and *real-time energy market*, as applicable.
	CARC$_k^m$ **(added as part of Stream 1)** The quantity (in MW) of the *hourly demand response resource's demand response contributors* total registered capability for *capacity market participant* 'k' at *delivery point* 'm', as registered with the *IESO* in accordance with the applicable *market manual;*
CBOC$_k$ The buy-out capacity is an amount that is being reduced from the *capacity obligation* for *capacity market participant* 'k'.	CBOC^m_k The buy-out capacity is an amount (in MW) by which the *capacity obligation* for the *obligation period* for *capacity auction resource* for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' is being reduced as per the *capacity market participant's* election pursuant to section 4.7J.3 of Chapter 9.
CCO$_k$ The *capacity obligation* for the obligation period per *capacity auction resource* for *capacity market participant* 'k'. The initial *capacity obligation* is acquired through a *capacity auction* and subject to being increased/reduced via transfer/ the buy-out process.	CCO$^m_{k,h}$ **(revised as part of Stream 1)** The *capacity obligation* (in MW) for the *obligation period* per *capacity auction resource* for *capacity market participant* 'k' at *delivery point* or *intertie metering point* 'm' in the relevant *settlement hour* 'h', as may be adjusted pursuant to the *market rules*.

Original Language	Revised Language
	$CICAP^m_k$ **(added as part of Stream 1)** The *Cleared ICAP* (in MW) for *capacity auction resource* at *delivery point* or *intertie metering point* 'm' for *capacity market participant* 'k' in the applicable *obligation period*, as determined in accordance with the applicable *market manual*.
$CNPF_m$ The non-performance factor as listed in Section 7.1 of Market Manual 12 that corresponds and applies to the month 'm' being settled.	$CNPF_{tm}$ **(revised as part of Stream 1)** For a given *energy market billing period* 'tm', the non-performance factor as listed in Section 7.1 of Market Manual 12.
$DREBQ_k$ The *demand response energy bid* quantity calculated for *demand response market* participant 'k' as the sum of the quantity of *demand response capacity* provided by all participating *demand response resources*.	$DREBQ^m_{k,h}$ **(revised as part of Stream 1)** the quantity (in MW) of *auction capacity* made available by an *hourly demand response resource* or *capacity dispatchable load resource* for *capacity market participant* 'k' at *delivery point* 'm' in *settlement hour* 'h' of the *availability window*, determined as the lesser of the *resource's energy bids* submitted in the day-ahead commitment process, pre-dispatch, and *real-time energy market*, as applicable, and where such value exceeds the $CARC_k^m$ for the *resource* in the relevant *energy market billing period*, the $DREBQ^m_{k,h}$ shall equal such $CARC_k^m$.
$DRSQty$ Calculated as (Total Bid Qty – Schedule) where 'Total Bid Qty' is the maximum quantity of the *demand response energy bid*	$DRSQty^m_{k,h}$ The quantity of *energy* (in MW) scheduled for withdrawal in the *real time market* by *market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* in *settlement hour* 'h' of the *availability window*, as described in the *real time schedule*.
$HDRBP_h$	$HDRBP^m_{k,h}$ The price component (in \$) of the *energy bid* submitted in the *real time market* for *hourly demand response resource* by *capacity*

Original Language	Revised Language
The price from *real-time* DR energy bid submitted by an *HDR resource* Where *h* is an hour within the activation window.	*market participant* 'k' at *delivery point* 'm' for *settlement hour* 'h' within the *availability window*.
HDRDC_h Min (Min (Total Bid Qty, Resource Capability, Capacity Obligation) – Schedule, Delivered Capacity) Where Delivered Capacity: For C&I HDR resources calculated as: • Max (0, HDR Baseline$_h$ – Actual consumption$_h$) For residential HDR resources calculated as: • Max (0, No. of contributors in Treatment Group$_m$ X (Adjusted Control Group Load$_h$ – Treatment Group Load$_h$)) Where h is an hour within the activation window and m is the month of activation, and Total Bid Qty' is the maximum quantity of the *demand response energy bid*, 'Schedule' is the real-time constrained schedule quantity, and Resource Capability is the HDR resource's registered capability	$\text{HDRDC}^m_{k,h}$ The delivered capacity (in MWh) by *hourly demand response resource* for *capacity market participant* 'k' at *delivery point* 'm' in *settlement hour* 'h' within the *activation window* of the applicable test activation, calculated as follows: $\text{Min}(\text{Curtailed MW}^m{}_{k,h}, \sum_{t=1}^{12}(\text{Min}(\text{TBQ}^m{}_{k,h}, \text{CARC}_{km}, \text{CCO}^m{}_{k,h})) - DQS\!$ Where: (a) "Curtailed MW$^m_{k,h}$" is the difference (in MWh) between baseline value, calculated in accordance with the applicable *market manual*, and actual consumption measurement data by *capacity market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* for *settlement hour* 'h', as calculated in accordance with the applicable *market manual*. "TBQ$^m_{k,h}$" is the offered quantity of *energy* (in MW) contained in the last lamination of the *price quantity pair* of the *energy bid* submitted in the *real time market* by *capacity market participant* 'k' at *delivery point* 'm' for an *hourly demand response resource* in *settlement hour* 'h'.
HDRTAPR $250 per MWh.	HDRTAPR The out of market test activation rate (in $), as set out in the applicable *market manual*.

Original Language	Revised Language
$OCMW_k$ Represent the over committed capacity of a generator-backed capacity import resource used by capacity market participant 'k' to satisfy its capacity obligation.	$OCMW^i_k$ The *over committed capacity* (in MW) of a *generator-backed capacity import resource* for *capacity market participant* 'k' at *intertie metering point* 'i', as determined by the *IESO*.

	RAC^m_k **(added as part of Stream 1)**
	
	The available capacity (in MW) of a *capacity auction resource* at *delivery point* or *intertie metering point* 'm' for *capacity market participant* 'k' in the applicable *obligation period*, and is determined in accordance with the following:
	
	    (a) For *capacity dispatchable load resources* and *hourly demand response resources*:
	
	    $RAC^m_k = MIN(DREBQ^m_{k,h}, (1.15* CCO^m_{k,h}), CICAP^m_k, CARC_k{}^m)$
	
	    Where:
	
	        (i) $CARC_k{}^m$ is only applicable to *virtual hourly demand response resources*
	
	    (b) For *capacity generation resources*, *system-backed capacity import resources*, *generator-backed capacity import resources* and *capacity storage resources*:
	
	$RAC^m_k = MIN(CAEO^m_{h,k}, (1.15* CCO^m_{k,h}), CICAP^m_k)$